Notebook, N-02-10-10

This notebook was probably begun in the late 1890s, although the only dated entry is from 1902. The entries are primarily by Edison. Most of the book consists of numbered entries relating to chemicals or chemical compounds being tested for either squirted filaments or insulation. These entries are most likely from October 1898 and contain a few notations by an unidentified experimenter. Also included is one page of notes on x-ray experiments, possibly from 1896. The one dated entry, from December 1902, is a brief note on a storage battery experiment. At the end of the book are a few drawings of ore milling equipment and phonographs, along with some miscellaneous calculations. The pages are unnumbered, and at least one page has been removed from the book. Approximately 60 pages have been used.

800

5) 1600
320

11

2250
8
20200

2257
9
2025.

All put in water except oily stuff
Oct 17 am

Incubation all put in from 1644
Tuesday pm 16 Oct

No 1 Syn 50 cc HO 50 cc NO_3 10 grms syn
none flash, puffs bright in flame
N

No 2 50 cc HO 50 cc HNO_3 - 15 grms Syn
Smoking very slightly brown
puffs with bright flame,

No 3 50 cc HO 50 cc HNO_3 - 20 grms Syn
just little Brown flash
puffs in flame much

No 4 50 cc HO 50 cc HNO_3 25 grms Syn

very small cent brown floats

Some white colonial such particles puffs

some 50 cent see note

No 5 50 cc HO 50 cc HNO_3 30 grms Syn

No 6 50 cc HO 50 cc HNO_3 35 grms Syn

No 7 50 cc HO 50 cc HNO_3 40 grms Syn

No 8 50 cc HO 50 cc HNO_3 45 grms Syn

No 9 50 cc HO 50 cc HNO_3 50 grms Syn

No 10 50 cc HO 50 cc HNO_3 10 grms selct. Amen

Considerable heat. ~~[illegible]~~

Soft lots white ash — 66 Trial

Out first milky then ——— yellow

Mod. [illegible]

perf. [illegible] on [illegible]

No 11 50 cc HO 50 cc HNO_3 15 grms selected Amen

No 12 50 cc HO 50 cc HNO_3 5 grms selected Amen
Bled out bleaches with pu
puffs transclose in flame

No 13 50 cc HO 50 cc HNO_3 20 grms selected Amen

No 14 50 cc HO 50 cc HNO_3 80 grms selected Amen

No 15 50 cc HO 50 HNO_3 80 grms selected Amen

16 Blank No 17 50 cc HO 50 HNO_3 } 10 Syn
10 HCl 10 HO

Black and flat to wash not puffy equally.

No 18 Same as 17 15 Syn
Smooth white flat black
puffs much.

No 19 - 50 cc HO 50 HNO_3
10 HCl 10 HO } 20 grms Syn

No 20 50 cc HO 50 cc HNO_3
10 HCl 10 HO
10 H_2SO_4 10 HO } 20 Syn
Very small trivial inf - puffs flame
somewhat [illegible] [illegible] per puff

No 21 same as 20 15 grms Syn
Moderate flash - Very small rush
white puffs only little, [illegible]
puffs easily in flame.

No 22 same as 20 20 grms syn
Considerable float in length jar
Abnormal - Milky then reddish - Meh. emphyst.
puffs badly in flame

No 23 same as 20 25 grms syn

No 24 - same as 20 10 grms selected Amen

No 25 Same as 20 15 grms selected Amen
Dried and ground puffed [illegible] in flour

No 26 Same as 20 20 grms selected Amen

No 27 Same as 20 25 grms selected Amen

28 50 cc HO 50 cc HNO_3 10 grms Prime Cu
Mod flout - 66% ~~[illegible]~~
~~[illegible]~~ — Ab Mal at first
muddy; then very bright yellow Mal
runs through — Dart puffs in flame bottle

29 50 cc HO 50 cc HNO_3 15 grms Prime Cu

30 50 cc HO 50 cc HNO_3 20 grms Prime Cu
Dart puffs in flame ample bot
white end.

31 50 cc HO 50 cc HNO_3 25 grms Prime Cu

No 32 50 HO 50 HNO_3 } 10 grms Prime Cu
10 HCl 10 HO

Dedut wash & very well — only about quart water few mins — filtered, then made no sp color — white sulphatine assay with small — scarcely any frit — chloride

Dont puff in flame awful lot ash —

No 33 same as 32 15 grms Prime Cu

Mod float yellow. Abnormal reddish yellow light, milky at 1st. Dont puff lot white

No 34 same as 32 20 grms Prime Cu.

35 50 cc HO 50 cc HNO_3
10 HCl 10 HO
10 HSO_4 10 HO } 10 grms Prime Cu

36 same as 35 20 grms Prime Cu

37. 50 HO 50 HNO_3 10 grms Syn 1 day
put in 10 oct out 12th 6224 Heal not
much ash - white - puff bad - flame

38 same " 2 days
in 10 oct out 13th puffy tremendous
in flame

39 same " 3 days
10 oct in out 14
Tremendous puff in flame -

40 same " 4 days
in oct 10 - 14th out

41 Same " 6 days
Mixt not fluffy 11 oct 17 in 10th
Puff badly in flame

42 same 10 grms Syn 8 days

43 same " 12 days

44 Same " 20 days

45 = Small quantity HNO_3 plus water say 3 times as much + some white oil — to make black medium ink

46 — 200 cc HNO_3 200 water 40 g sy ground (dissolved sy fill with ok) with water in mortar + put in jar — it works ok but slowly wait 1 week 24 cc cp HCl — put in monday 17th out 25th 3pm Hot mel grand dial not light yellow but not muddy Little should be more weight made OVW

May be the reason it was not light
Coming yellow is on account of
HCl – or from feet & followed it
without diluting thinned down
then warmed little, then put
whole in run for with distilled
+ boiled it after boiling all
Come to top + peculiar Decomp
smell given off.

47 Some CP Amly oil –
about 10 times bulk of water +
CP HNO_3 until all dissolved,
Distilled water – and –
Explosion in flame

48 to 40 Sy + 9 times 200
HNO_3 200 cc H_2O – 1 week
Meal gives very red. Explosive
ether – Aldehyde – pyridin
dis + then pp HCl still Explo
puffs bad in flame Contrary ref.

49 – H_2O dist. anil, then CP HNO_3
H clear + then Excess acid not
much – Should say H_2O 6 time
expressed as acid, ~~Explosive~~

50 – New Line of Experiments all
within apparently failure
pinkish – HNO_3 –
20 g old Sy in bottle 200 cc
H_2O 200 cc fuming nitric
acid – gradually wet Sy in
Mortar – put into then acid
then other mixing H_2O + and Sy

50 is rotten with white
ash - puffs some but not well
smoked by Mol 9 regularly
This would show that Lamour
Best lump Sy was better
than red Oliff weed —

Oct - Monday Oct 24

out, Oct 24

51 — submitted 20 grms, 200 cc
distilled water 200 fuming HNO3
Dilute wet before burning
Burned weed 4 - water produced
Red not when dilute put in
slight fume (Very little ash
about same as Bay (Best Leaf) red leaf
puffs awful - electric pity not smoked enough or
weak stomach acid — am testing

52 — Same as 51 - out Oct 24
Amount puffs and exhibit — very well
lighted with less than Best lump Sy or about same
in favor of less in 52 — I dont powder yellow stains like
other but check & stay to smoke — am testing

53 Same as 51 but plume Cubain

54 Same as 51 20 grms Best
out Oct 22
lump Sy - Lamour — good
Very little ash - reddish Best of all —
puffs little but when puffed well poly see puff
great deal of smoke — Sample of 54
Tuesday 21 put 53 in formaline dish
with about 25 cc of Hydrofluoric
10 am —

55 200 cc HCl
10 grms Chlorate K
30 grms Gelsemite

24th oct 6 pm Oct 25

puffs after strong heat Mal
no more ash added than before.
The small quantity of old Sy
worked good no puff - very slt
Chl not so good in dipi
No puff - acid fumes came off
very little Reg smell or decomposing
Evidently Gelsemite is def from
old Sy but old Sy has
great deal white ash -

56 — Best Lump Sy 40 grms
400 cc HCl Cp 200 cc Dist
H_2O 40 grms Chlorate K.
Oct 25th 2 pm in —
~~200 HCl dist at qp of Sample~~
put out at 450 — dont puff but
absolutely none — there is some Cl
comes off in fumes — Mal hot Cakes up

Considerable stiff acid vapor
+ Resinous smell came off
Very light yellow resinous
White lots of Chlorate Crystals
left – Better by repeated
precipitation to get minimum quantity
Chlorate + HCl & H_2O sol
Confined in 1 day,
Wet the stiff pasteboard & it
doesn't puff up at top, fir mean
as much as my think Cond
was 3 times as much as you
permit surfaces –

2nd month 1st part –
~~Washed~~ filling nearly full
strength in Lucian
then poured Considerable
H_2O, then put in jar with
Dist + boiled then filtered
hot + afterwards some Cold
H_2O, then filth. Mat to
clear water out then in
Considerable quantity, Hot
mat for 20 min filtered
Made red resin + that
then little ched + finally
filter Crystal & puff wet & mat

57 – Chl Sul nearly saturated
with Sup Sy, then poured
Kero filtered + dried, one
part had little, Ether though it
but am afraid Ether made it
dry w/ heater all night.
25th = 1 part Kero filtered then Ether
wash then mat – other part tried Sup Kero had
no ether – tried Sup Ether but ing wash Ether
to Chl & must be divided with Sup Sy nearly so
ing free or only little free Chl & given to Mero

58 – 40 Bl Sy wet with 400 cc water
20 grms Chlorate K powdered
100 cc Dist water warm –
200 cc HCl Cp –

58 –

40 gms Baby 40 cc water to wet
20 gms powdered Chlorate K
150 cc am Dist water
300 HCl CP –

after 4 hours took it out but notwithstanding of it which by hot Mal seems ok as to color puff enormously & Evidently ing 3 times more than 1/2 of the Crystals of Chlorate undissolved Evidently there not enough Chlo dissolved & probability is that the solution must be a little warm say 120 Fah. –
I put it away in 6 all O. before fully dry of Mal –

60 40 BSS 40 cc water to wet
20 gms Chlorate K powdered
50 cc cold Dist water
150 HCl CP –

The acids look 58 but only
pale slightly, perhaps a
little manipulation would
make it ok –

61. 40 sy BL 40 water (Trust
10 Chloritek powdered
50 cc von Bist water
150 HCl Cp

Filling —

Make new test when
return from Ogden —

62 — Florence flask with
some 150 mch gm Cubes
with Burnel & de Ronden &
see if solution is filtered
off

Snow repeat 48 9 60 x 61 –
Wet B.L.Sy – having 1 gm H_2O_2 to 1 gm Sy.

No 63 100 HCl cp 100 H_2O 20 gms
Chloratek. Worked a little warm
40 B.L.Sy – added
2 gms Chl. [illegible] 1 gms
Very great contraction, no puff
Reacted like [illegible] Except not so light
Color – Urunk 65 OK –
Sat. Sys fair Chlors fair –
Clogs bottle – Chlors not so
good – 63 – Clogs –
[illegible] shoulder puffed by [illegible]
64 – 130 HCl 100 H_2O 20 gms
Chlorat K worked a little warm
40 B.L.Sy – added 2 gms
Chl after
puffed a little not quite but
nearly enough acting ~~[illegible]~~
~~[illegible]~~, nearly 1/2 show

$\frac{1}{4}$ of this take
65 200 HCl 100 H_2O 20 ClK
which little warm 40 BSby
added 2 gms ClK after
acts precipitate as 6p.
Weight 10 gms 3 oxi beside
what I used in platinaspoon
in 2 hours
Thus 200 HCl 100 H_2O 28 ClK
40 BSby

66 300 HCl 100 H_2O 20 ClK
which little warm 40 BSby
added 2 gms Cl after
in 2 hours
Dont puff on heat - shrunken quickly
green flame off at 1st afterwards
not so much combustible as Reg
not very much red from mal
output apparently great
Very Sol in Cl Ino - but so good in
Alpi - it Very light Brown
Weight 9 gms 6 Cl it gms
back

67 = 90 grms $PbSi$
400 HCl
200 H_2O
70 grms $KClO_3$ - 10 grms added at time - water bath 130
put 1st 10 grms ClO_3 in at 440 -
cool - - after 3 put in took
out some to test, this was at
5 30 pm. When added the 4th
charge of ClO_3 - it puffs up
about 2 inches quickly.
temp water about 150 add time
put in only 60 grms ClO_3
because I took out about 20 grms
or less. Towards end put of
in a charge. dont puff it but
1/2 @ 1 inch - at 625 put in
last charge -
Notice that when temp H_2O
outside jar is increased to 170
a small puff at 140 quadruple
at 170 - although ClO_3 all
dissolved - I think in proportion
the proportions should be 20 Chl
instead of 6 + outside water
160 @ 170 the sulfur Si
+ Carbon quicker - over

67 – took it out 725, test
last taken at 640 showed it
OK no puff at all, ~~[illegible]~~
Made the standard,
It seems to dissolve perfectly
in Chloro without agitation
Shrinks gradually in Carbon
Considerable inflam matter
Comes off –

Ether takes out a great deal – Ether
sticks to it or it softens smoothly & I
stop it by – puffs no more than
Reg. 67 when used with Chloro –
The Mat Residue seems Contain
good deal rosin –
Tried 3 67 – 1 gm Com 5 drop
dropi – boiled down when thick
put on plate then worked Dark
Ruled got stuff when cool –
Forgot not stiff like perfect
shiny – puff very much – but
comes lying – send on flame –
Tried August Chloro alone 4 gm
67 – boiled to thick dropped good
stuff when cool – had to work

Long time in hand after applied to stop block in outside, and old yellowish one with Reg & Dress so slowly that I can work it to my stuffing, old Reg Dress too spunk to do this. There must be some chem change with Chloro that makes a perfect sticky. If Chloro alone fills with oil there will be no trouble,

Another good Case ! ! !

CP Acid made into a Hydrochloate, then Excess acid HCl + Chloride K oxidizes to green — filter 9½ hrs 68

~~Day the powder washed itself in filter dried in hot air oven dry - further p. wash in ordinary - Dryer [illegible] Cooler [illegible] [illegible] d. very fine as wet~~

68 – 400 cc Water
100 cc cp. Anilin oil
50 grams Chlorate K
after anilin neutralized by HCl
to form Hydrochlorate & 9
added 200 cc of HCl to
excess of Chlorate. –

later note can all be done in 5 min. ~~[illegible]~~

No 68 action all night. filtered washed
boiled with N_2O afterwards Mal –
Should say get 60 grams stiff. It's
perfectly bad in Isobutylamine only of all
the solvents tried. Methpropanol also
does fairly well also Pyridin but there
is only one Solvent Isobutamine to perfect.
Don't puff near so much when mixed in
Reg – after Fish up Dipi or Pyridin can
be used. The dry stuff Carbonizes absolutely
without even the faint pattern swelling
they may just like Lump Black. It's
probable that this base could be mixed
with Reg Worth Fish to make it
porous & yet have the 68 stuff
contract with Reg which I think
it will do –

The action of NaO on Dinitrobrazol in Mol produces a good base except that there is some nitrazol left & this I cannot get out by mole. I want further experiments. Mg without better reduction of Cu be perfectly reduced. Fe fine otherwise Mg will require Experts to reduce it properly.
The black stuff from pyrogallol & NaO Expound to evi. when pump by and well washed & I think washed with mol is a perfect base Dipi a perfect solvent, acts when pumped nic. Dont puff or swell much when wet.
But the residue is very small say 5 @ 7 % of original pyrogallol. This could probably be mostly dissol by oxidation & alcohol to worked up. Thus all the NaO oil stuffs we want to get well by Sal Dipi. These pyrogallol bases with O can be made OK by Expert Chem.

69 — Base probably be good
dis Naphanine in Mal then
add NO_3 then HCl, white pp —
then more HNO_3 + Brown color
thrown in H_2O — pps — more pps
by NH, filter — then Mal dissolve
some — If can get clear
of Mal stuff — don't think
pp [illegible] — I leave 69
[illegible] over night —
69 X is after partial pp [illegible]
Mal dried & dis Chlor.
which it does perfect
then pp by Mal — and filtering

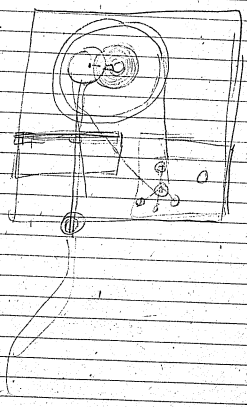
Base

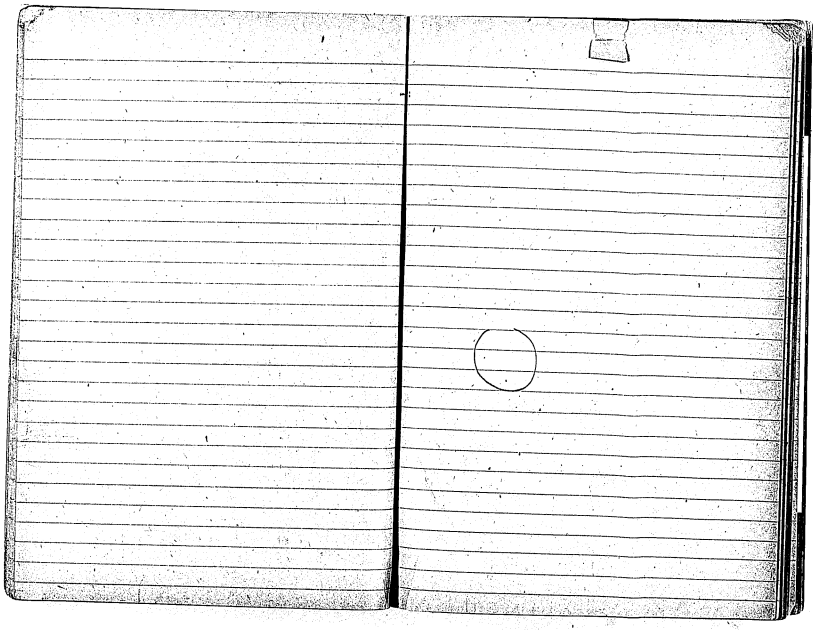
Pyrocatechin + KO cannot
drop into HCl + chlorate K =
perfect base —

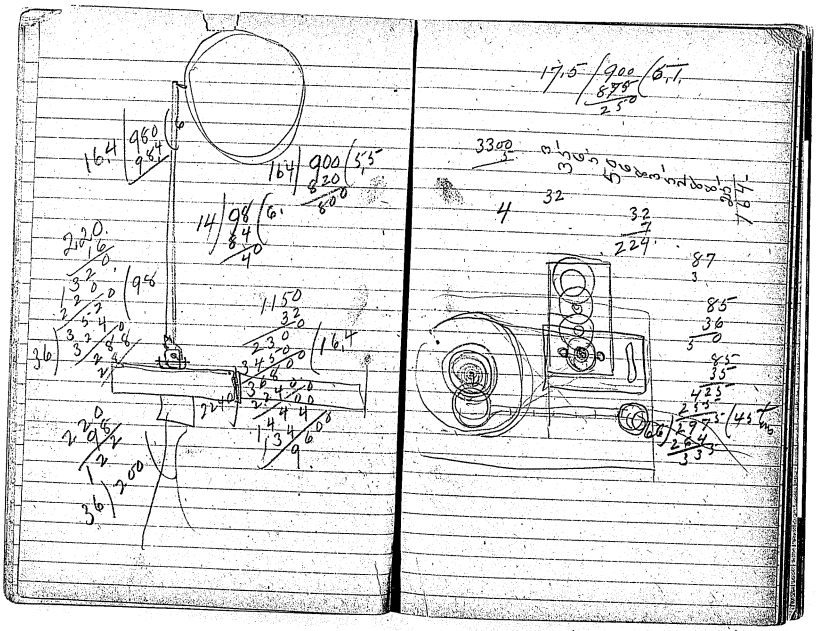
Base —

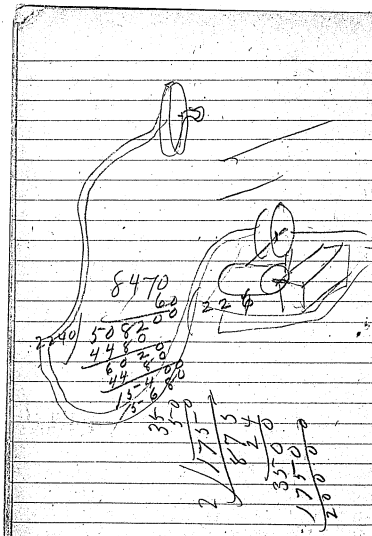
Aniline hydrochlorate oxidized by
Current even better than HCl + check

Asphaltum in chloroform + use
Chloride Iodine just as good
as Reg. only part how the Reg
develop Smell of Reg
good —









112
64
448
672
716.8

12) 770 (64
72
50

746
30
10

112
80
8960
30
2688

77
110
77
77
847

314
36
1884
942

1728) 134400 (77
12096
1344

12) 112.04 (9.33
108
4.0
3.6
.4

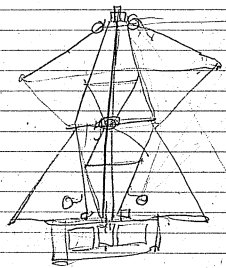
746.4

144) 2688000 (1866
144
1248
1152
960
864
960

24) 1866. (77.
168
186

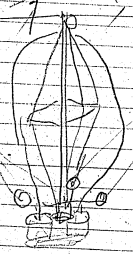
四
E

1 60
60
3600 = 1 sec
1000000
3,600,000,000



68
75 43
10 204
65 272
130 272
13 24
260 40
260 4322 21
27 150
270 12
270
192
132

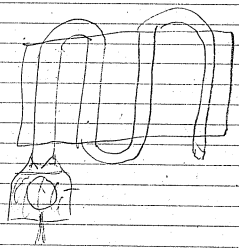
15
3
45 - 300) 5000 (16
1200 300
90 2000
60 1800
1700

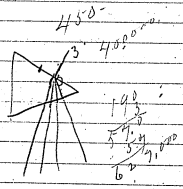


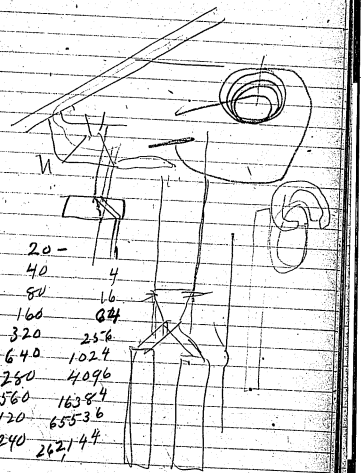
540000

50
3
15,000
100

3
4) 52
13) 168 (12
13
360
360
0

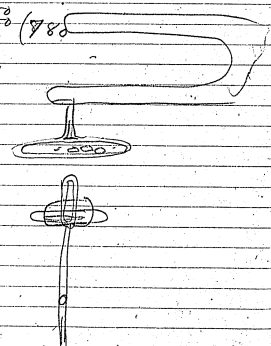






20	
40	4
80	16
160	64
320	256
640	1024
1280	4096
2560	16384
5120	65536
10240	262144

5000 -
7500
16) 125000 (7800
112
130
128
2



Mitogh - new exhuder large induction disc - break wheel X-ray way get chrotane audible hole, short Ex tubes, break in waves data & doubt.

Small Vac tube high Vac light by agitation, use NaCl + Ag Cl. Ultra phosphorescence data, Nitrate Ur + Nitrum - platinum Cy Ba + K, Cuprocyanide of K - Argentocyanide of Al, + other 80% fluorescence also CaWO4 =

Try tube to end glass rod - longitudinal vibration with rosin cloth -

Photo each X ray plate 16 substances on outside with arc dimmy on. Crystals with idea that a ray will pass through opaque sheet & photo -

Try with arc fluorescence of all -

335

78
9
546

785
211
785
1650.635
785
1570

338
85
4.3

211
25
05
5
4.2
7
6.2
785

35000
5
21.79
1650.0
1570
785.00
1785.00
1.5.7

423
85
1.08

25
85
0

1.5.7
50
50
785.1

2.85
3.3

5
2.8
4
3.0

785
.5
.4
.3
.2
3.75
125
500
4
125

211
62
7
2.5

315 = lbs

78

3

1/2

78
9
546
5

3 1/2

Ore	564
Coke	150
Lime	25
Labor	70
Lining Mgr	20
Rent	20
	849
	230
	1079

94
564
Coke

600
240
240

16
6

1111 25 Dec 1902

S Bat

There is a Rec bet an mixture Chloride + the electrolyte of unknown Chloride this possibly affects R of S Bat on the graphite – hence try coating graph with platinum from Chloride by igniting – also plating palladium + checked by reducing $Mn(OH_2)$ quality etc.

Try amalgam of Ni in prod with graph at bridge blg + then dissolve heat by Nitric etc

Try Nitride Ni

Reducing Fused Borate, phosphate
Sulphate, Silicate, the fusion
Oxalate K Cyanide, the [illegible]
Neutral Nitrate [illegible]

24
24
96
48
576 —
900

16
16
96
16
256

256 | 900 (3,5
168
1320
1280

$3\frac{1}{2}$ =

3300
3300
990
990
990
1089.

256 | 1089 (6
1536

50000 — 576 —

16
16
96
16
256

50000
128 | 50000

20000
31
100000
600000
900000
1

576
50,000
28,800,000

256
50000
128 | 6000000

256
20000
5120000

20000
900
18 | 000000

1200
24000
24000000

1089
20000
21780000

27000 drag
270
18900
22 HP
33000
90
69

225 000
350 000
500 000
65

650 00
4

24 000 / 36

4.3 / 5000 (1160

43
43
276 300 000
215 150 000
450 000

2000000

7400 700

1200
2400
3300

165 000 (51
165 000
0

100

2400
800
33 / 192000 (58
165 000
27 000
3000

33 / 1500000 (45
1320000
180000
135000
1500

24 / 9

3½

3.4 / 2000 (66
204

210
60
35
25
30
30
10
10
5
5
5
15
15
30
20
25
30
588

116 HP
90
206

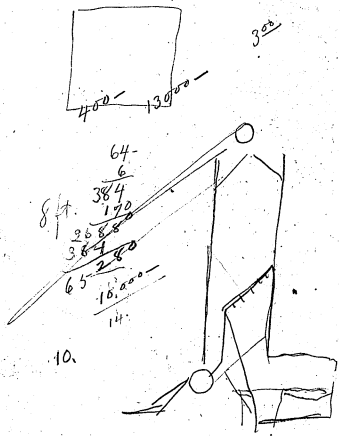
2

15
300
45

15

5 8
62

555 HP
3
166 50
3330



N-02-10-10

15

100

500

350

60

$100

300

5

500

120000
1500

300

350

$ $ $

12) 1500 (125

12

30

24

60